Amendments to the Claims:

Please amend claims 1, 5, 6, 8, 9 and 15, as shown in the following listing of claims. This listing of claims will replace all prior versions and listings of claims in the application.

1. (currently amended) An improved decision feedback equalizer apparatus for use with minimum- and maximum-phase channel responses, the apparatus comprising:

a channel estimator for providing an estimated channel response of a channel from received signal data;

a device for determining if the channel is minimum phase or maximum phase;

a feed-forward filter and a feedback filter of an associated decision feedback equalizer having coefficients computed:

(a) from the channel response considered in a time-forward manner, if the channel is minimum phase, or

(b) from the channel response considered in a time-reversed manner, if the channel is maximum phase; and

a data processor for processing the signal data:

(a) in a time-forward manner, if the channel is minimum phase, or

(b) in a time-reversed manner, if the channel is maximum phase.

2. (original) The improved decision feedback equalizer apparatus of Claim 1, wherein the device for determining if the channel is minimum phase or maximum phase determines the relative strength of the energies in the channel response and compares the energies to determine if the channel is minimum phase or maximum phase.

3. (original) The improved decision feedback equalizer apparatus of Claim 2, wherein relative strength of the energies in the leading part of the channel response is compared to the relative strength of the energies in the trailing part of the channel response.

4. (original) The improved decision feedback equalizer apparatus of Claim 3, wherein the energies of multipath components in the leading part and the trailing part of the channel response are summed and used to derive whether the channel is minimum or maximum phase.

5. (currently amended) The improved decision feedback equalizer apparatus of Claim 1, wherein the apparatus is used in a ~~GSM~~ Global System for Mobile Communication (GSM) system.

6. (currently amended) The improved decision feedback equalizer apparatus of Claim 1, wherein the apparatus is used in an ~~EDGE~~ Enhanced Data for Global Evolution (EDGE) system.

7. (original) The improved decision feedback equalizer apparatus of Claim 1, wherein the channel response is classified on a burst/time slot basis.

8. (currently amended) An improved decision feedback equalizer apparatus for use with minimum- and maximum-phase channel responses, the apparatus comprising:

a channel estimator for providing an estimated channel response of a channel;

a device for examining the estimated channel response and determining the relative strength of the energies in leading part and the trailing part of the channel response, wherein the channel is minimum phase if the energies in the leading part are greater than the

energies in the trailing part, and maximum phase if the energies in the trailing part are greater than leading part;

a feed-forward filter and associated decision feedback equalizer having coefficients computed using the estimated channel response:

(a) in a time-forward manner, if the channel is minimum phase, or

(b) in a time-reversed manner, if the channel is maximum phase; and

a data processor for processing the signal data:

(a) in a time-forward manner, if the channel is minimum phase, or

(b) in a time-reversed manner, if the channel is maximum phase.

9. (currently amended) A method for implementing an improved decision feedback equalizer for use with minimum- and maximum-phase channel responses, the method comprising the steps of:

estimating a ~~the~~ channel response of a channel for a received signal;

determining if the phase characteristic of the channel is minimum phase or maximum phase; and

calculating the coefficients for a feed-forward filter and feedback filter of an associated decision feedback equalizer as follows:

if the channel is minimum phase, then calculate the coefficients by considering the estimated channel response in a time-forward manner; or

if the channel is maximum phase, then calculate the coefficients by considering the estimated channel response in a time-reversed manner.

10. (original) The method of Claim 9, wherein the step of determining the phase characteristic of the channel includes:

examining the estimated channel response;

determining the relative strength of the energies within the estimated channel response;

characterizing the channel as minimum phase if the collective strength of the energies in leading part is greater than the collective strength of the energies in the trailing part; and

characterizing the channel as maximum phase if the collective strength of the energies in the trailing part is greater than the collective strength of the energies in the leading part.

11. (original) The method of Claim 9, wherein the step of estimating the channel response includes:

utilizing a sequence of training symbols in the transmitted signal to facilitate estimation of the channel response.

12. (original) The method of Claim 9, wherein the improved equalization is applied to a receiver in a GSM system.

13. (original) The method of Claim 9, wherein the improved equalization is applied to a receiver in an EDGE system.

14. (original) The method of Claim 9, wherein the estimated channel response is classified on a burst/time slot basis.

15. (currently amended) A method for implementing an improved decision feedback equalizer for use with minimum- and maximum-phase channel responses, the method comprising the steps of:

estimating a ~~the~~ channel response of a channel for a received signal;

determining the phase characteristic of the channel by:

analyzing the estimated channel response;

determining the relative strength of the energies in the leading part and the trailing part of the estimated channel response;

characterizing the channel as minimum phase if the collective strength of the energies in the leading part is greater than the collective strength of the energies in the trailing part;

characterizing the channel as maximum phase if the collective strength of the energies in the trailing part is greater than the collective strength of the energies in the leading part; and

calculating the coefficients for a feed-forward filter and feedback filter of an associated decision feedback equalizer using the estimated channel response, and processing the data from the received signal:

(a) in a time-forward manner, if the channel is minimum phase, or

(b) in a time-reversed manner, if the channel is maximum phase.